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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,656	08/07/2006	Naoki Sugiyama	294366US0PCT	9238

22850 7590 02/08/2008
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
HON, SOW FUN	
ART UNIT	**PAPER NUMBER**
1794	

NOTIFICATION DATE	DELIVERY MODE
02/08/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/588,656	SUGIYAMA ET AL.	
	Examiner	Art Unit	
	Sow-Fun Hon	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-10 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-10 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 11/03/06,8/07/06.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites "a refractive index of which in the longer diameter direction is larger than the average refractive index of which in the direction crossing the longer diameter direction at right angles", which is much clearer when rephrased as "a refractive index in the longer diameter direction which is larger than the average refractive index in the direction perpendicular to the longer diameter direction", and interpreted as such for the purposes of examination.

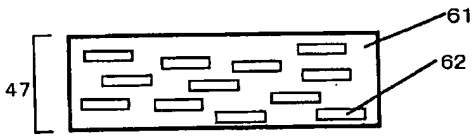
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda (US 2001/0022997).

Regarding claim 1, in Fig. 3 shown below, Honda teaches a film (resin film 61, Fig. 3, [0034]) which can comprise: (A) cycloolefin resin ([0033]), and (B) particles 62 ([0034]) which can be inorganic (mica, [0034]), have a longer diameter and a shorter diameter and thus exhibit shape anisotropy (scaly, mica, Fig. 3, [0034]) and which are orientated substantially parallel to the film plane (parallel to the surface of the resin film, Fig. 3, [0034]). Honda fails to teach an example in which the cycloolefin resin and the inorganic particles are present in the same film.



However, by providing the cycloolefin resin in the list of resins that are suitable for the film resin matrix ([033]), and the inorganic scaly particle in the list of particles that are suitable as the particle having a different refractive index (mica, [0034]), Honda teaches that the two can be combined in the same film, for the purpose of providing the desired transmittance and reflectance of the incident light (transflector, [0032]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have combined the cycloolefin resin and the inorganic particles in the same film of Honda, in order to obtain a film that provides the desired transmittance and reflectance of the incident light, as taught by Honda.

The inorganic scaly mica particles of Honda ([0034]) are disclosed as being suitable particles in Applicant's specification (page 51, line 19), and thus inherently have a refractive index in the longer diameter direction which is larger than the average

refractive index in the direction that is perpendicular to the longer diameter direction, exhibiting birefringence. Fig. 3 of Honda, shown on a prior page, show that the particles 62 are oriented so that the longer diameter direction is parallel to the film plane direction, which means that the film has a difference in refractive index between the film plane direction and the film thickness direction, and hence has retardation properties.

Regarding claim 2, Honda teaches that that phase difference (R0) in the film in-plane direction is in the range of 30 nm or less ([0011]), which overlaps the claimed range of 10 to 1,000 nm.

Regarding claim 4, the inorganic particles (B) taught by Honda are mica ([0034]) which inherently has crystalline properties. Honda teaches that the inorganic particles have a particle size of about 0.1 μm ([0034]), which means that an average longer diameter of the particle is within the claimed range of not more than 2 μm.

Regarding claim 5, Fig. 3 of Honda, shown on a prior page, discloses that the inorganic particles 62 (Fig. 3, [0034]) have a ratio (L/D) of a longer diameter (L) to a shorter diameter (D) of not less than 2, and that the longer diameter direction of the inorganic particles is arranged substantially parallel to the film plane.

Regarding claim 6, Fig. 3 of Honda, shown on a prior page, discloses that the inorganic particles are oriented parallel to the surface of the film (Fig. 3, [0034]), which orientation is ordinarily performed by stretching the film.

Regarding claim 7, Honda teaches a laminate film comprising the film which has retardation properties discussed above, and a metal film (providing a metal thin layer on a resin film, in lamination of two or more of these layers, [0032]), wherein the metal can

be silver ([0035]), which is inherently conducting, and is transparent (increase transmittance [0035]).

Regarding claim 8, Honda teaches that a polarizing plate (transflective polarizer 71, Fig. 1, [0024]) is obtained by laminating a film (a) (dichroic polarizer 41, Fig. 1, [0024]), a polarizing film (b) (reflective polarizer 43, Fig. 1, [0024]) and a film (c) (transflector 47, Fig. 1, [0024]) one upon another in this order, wherein film (a) inherently protects polarizing film (b) by being the outer layer, and film (c) is the film that has retardation properties along with transflecting properties, as discussed above.

Regarding claim 9, Honda teaches that the film which has retardation properties as discussed above is disposed in a liquid crystal display device (transflector, [0032], transflective liquid crystal display, [0031]).

Regarding claim 10, Honda teaches that the polarizing plate discussed above is disposed in a liquid crystal display device (transflective polarizer used for a liquid crystal display, [0029]).

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honda as applied to claims 1-2, 4-10 above, as evidenced by Higashi (US 6,060,183).

Honda teaches a film comprising: (A) cycloolefin resin, and (B) inorganic particles which have a longer diameter and a shorter diameter, thus exhibiting shape anisotropy, a refractive index of which in the longer diameter direction is larger than an average refractive index in the direction perpendicular to the longer diameter direction, exhibiting birefringence, wherein inorganic particles (B) are orientated, and the film has a difference in refractive index between the film plane direction and the film thickness

direction, which means that it has retardation properties, as discussed above. In addition, Honda teaches that the inorganic particles are mica ([0034]), and that a phase difference (R0) in the film in-plane direction that is close to the lower limit of 10 nm (30 nm or less ([0011]). Although Honda is silent regarding the phase difference (Rth) in the film thickness direction, let alone one that is within the range of 10 to 1000 nm, this phase difference (Rth) in the film thickness direction is one that is inherent, as evidenced by Higashi.

Higashi teaches that a film containing inorganic mica (clay mineral is a mica, column 10, lines 23-25) wherein the longer diameter direction of the inorganic mica are orientated substantially parallel to the film plane (crystalline layer units of the clay compound is oriented parallel to the plane, column 5, lines 14-18), which has a phase difference (R0) in the film in-plane direction that is close to the lower limit of 10 nm (10 nm, column 10, lines 1-10), does have a phase difference (Rth) in the film thickness direction, that is in the range of 130 nm to 653 nm (R', column 10, lines 1-10, R' in the thickness direction, column 1, lines 29-30), which is within the claimed range of 10 to 1000 nm.

4. Claims 1-3, 6, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higashi (US 6,060,183) in view of Minakuchi (US 2002/0169267).

Regarding claim 1, Higashi teaches a retardation film (phase retarder, column 8, lines 40-45) comprising (A) a resin (column 8, lines 30-31) and (B) inorganic particles (organic solvent dispersion of organic clay compound, column 8, lines 29-32, containing clay mineral which is a mica, column 10, lines 18-24, mica is inorganic), wherein the inorganic particles (B) are orientated (crystalline layer units of organic clay compound, column 5, lines 15-16, containing mica, column 10, lines 18-24) and the retardation film has a difference in refractive index between the film plane direction and the film thickness direction (column 10, lines 1-10). The inorganic mica particle has a longer diameter and a shorter diameter, hence exhibiting shape anisotropy (crystalline layer units of organic clay compound, column 5, lines 15-16, containing mica, column 10, lines 18-24).

In addition, Higashi teaches that the resin can be polycarbonate (column 6, lines 1-20), but fails to teach that the resin can also be a cycloolefin resin.

However, Minakuchi teaches that a cycloolefin resin can be used in place of polycarbonate, for the purpose of obtaining the desired phase retardation properties provided by the cycloolefin ([0004]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used a cycloolefin resin in place of polycarbonate as the (A) resin in the retardation film of Higashi, in order to provide the desired phase retardation properties provided by the cycloolefin, as taught by Minakuchi.

Regarding claims 2-3, Higashi teaches that the phase different (R0) in the film in-plane direction is 10 nm (column 10, lines 1-10, in-plane, column 1, lines 40-41), and that the phase difference (Rth) in the film thickness direction is in the range of 130 nm to 653 nm (R', column 10, lines 1-10, R' in the thickness direction, column 1, lines 29-30), which is within the claimed range of 10 to 1,000 nm.

Regarding claim 6, Higashi teaches that the inorganic particles are oriented parallel to the film plane (column 5, lines 15-20), which orientation is ordinarily performed by stretching the film.

Regarding claim 9, Higashi teaches that the retardation film is disposed in a liquid crystal display device (column 1, lines 5-10).

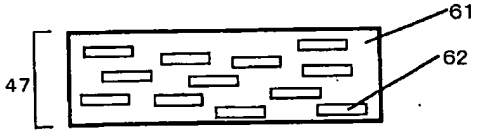
5. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higashi in view of Minakuchi as applied to claims 1-3, 6, 9 above, and as further evidenced by Honda (US 2001/0022997).

Higashi, as modified by Minakuchi, teaches a retardation film comprising: (A) cycloolefin resin, and (B) inorganic particles which have a longer diameter and a shorter diameter, thus exhibiting shape anisotropy, a refractive index of which in the longer diameter direction is larger than an average refractive index in the direction perpendicular to the longer diameter direction, exhibiting birefringence, wherein inorganic particles (B) are orientated, and the film has a difference in refractive index between the film plane direction and the film thickness direction, as discussed above.

In addition, Higashi teaches that the inorganic particles (B) are mica (organic solvent dispersion of organic clay compound, column 8, lines 29-32, containing clay

mineral which is a mica, column 10, lines 18-24, mica is inorganic) and have crystalline properties (mica crystal, column 2, lines 32-35, crystalline layer units, column 5, lines 15-16), wherein the inorganic mica particles (B) are arranged substantially parallel to the film plane (oriented, column 5, lines 15-16), which means that the longer diameter direction of the inorganic mica particles (B) is arranged substantially parallel to the film plane. Higashi fails to disclose that the average longer diameter is not more than 2 μm, or that the ratio (L/D) of the longer diameter (L) to the shorter diameter (D) is not less than 2. However, these dimensions are common to inorganic mica particles, as evidenced by Honda.

Honda teaches a film (resin film 61, Fig. 3, [0034]) which can comprise: (A) cycloolefin resin ([0033]), and (B) particles 62 ([0034]) which can be inorganic mica ([0034]), have a longer diameter and a shorter diameter and thus exhibit shape anisotropy (scaly, mica, Fig. 3, [0034]). Honda teaches that the inorganic mica particles can have a particle size of about 0.1 μm ([0034]), which means that an average longer diameter of the particle is within the claimed range of not more than 2 μm. Fig. 3 of Honda, shown below, discloses that the inorganic mica particles 62 (Fig. 3, [0034]) have a ratio (L/D) of a longer diameter (L) to a shorter diameter (D) of not less than 2, and that the longer diameter direction of the inorganic mica particles is arranged substantially parallel to the film plane (Fig. 3, [0034]).



Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris, can be reached on (571)272-1478. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sophie Hon/

Sow-Fun Hon

TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700